



On the non-analyticity locus of an arc-analytic function

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Résumé en anglais

Let X be a real analytic manifold. A function $f: X \rightarrow \mathbb{R}$ is called arc-analytic if it is real analytic on each real analytic arc. In real analytic geometry there are many examples of arc-analytic functions that are not real analytic. They appear while studying the arc-symmetric sets and the blow-analytic equivalence. In this paper we show that the non-analyticity locus of an arc-analytic function is arc-symmetric. We also discuss the behavior of the non-analyticity locus under blowings-up. By a result of Bierstone and Milman, an arc-analytic function $f: X \rightarrow \mathbb{R}$ that satisfies a polynomial equation with real analytic coefficients, can be made analytic, over any relatively compact subset of X , by a sequence of blowings-up with smooth centers. We show that these centers can be chosen, at each stage of the resolution, inside the non-analyticity loci.

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